CLAIMS:

1. A device for detecting the presence of a chemical contaminant, the device comprising an indicator element which is held in a first position by means of a failure element which is held in tension, the failure element being made of a material which fails in the presence of the chemical contaminant, thereby releasing the indicator element from its first position and allowing it to move into a second position in order to provide an indication of the presence of the contaminant.

2. A device according to claim 1, wherein the indicator element is held in the first position by a biasing force, the biasing force acting to move the indicator element to the second position upon failure of the failure element.

3. A device according to claim 2, wherein the biasing force is provided by the resilience of the indicator element.

4. A device according to claim 3, wherein the resilient indicator element is a spring which is fixed to the failure element, the spring being under compression, such that the failure element is under tension.

5. A device according to ~~any preceding claim~~ claim 1, wherein the failure element is a tubular member.

6. A device according to claim 5, wherein the tubular member is sealed, the inside of the tubular member is maintained at a pressure other than atmospheric, and means are provided to monitor this pressure to determine the integrity of the tubular

member.

7. A device according to ~~any one of claims 4 to 6~~ claim 1, wherein the spring is attached to the failure element by a respective starlock washer at each end of the spring each washer being anchored to the failure element so as to be capable of movement in only one direction along the failure element.

8. A device according to ~~any one of the preceding claims~~ claim 1, wherein the failure element is made of a material which changes its appearance in the presence of the contaminant.

9. A device according to claim 1, wherein the indicator element is held in the first position by a biasing force and wherein a further force, which is strong enough to override the biasing force is arranged to act on the indicator element to move it to the second position upon failure of the failure element.

10. A device according to claim 9, wherein the failure element is a tubular element and the indicator element is within the tubular element and is fixed at one end to the failure element, while its other end projects beyond the other end of the failure element and is biased away from the other end of the failure element.

11. A device according to claim 9, wherein the failure element and indicator element are arranged to be supported vertically, wherein the further force is gravity.

12. A device according to ~~any one of the preceding claims~~ claim 1, wherein the failure element comprises a number

of different materials arranged in series and/or in parallel.

13. A device for detecting the presence of a chemical contaminant, the device comprising a resilient indicator element which is held in a first position and is anchored in the first position by means of a failure element, the failure element being made of a material which fails in the presence of the chemical to be detected, thereby releasing the indicator element from its first position and allowing it to move into a second position in order to provide an indication of the presence of the contaminant; wherein the failure element is elongate in the sense that it is larger in the direction in which the indicator element moves on failure of the failure element than it is in any other dimension.

14. A device according to claim 13, wherein the failure element is held in tension.

15. A device according to claim 13 ~~or claim 14~~ Claim 14, wherein the indicator element is held in the first position by a biasing force, the biasing force acting to move the indicator element to the second position upon failure of the failure element.

16. A device according to claim 15, wherein the biasing force is provided by the resilience of the indicator element.

17. A device according to claim 16, wherein the resilient indicator element is a spring which is fixed to the failure element, the spring being under compression, such that the failure element is under tension.

18. A device according to ~~any one of claims 13 to 17,~~ claim 13 wherein the failure element is a tubular member.

19. A device according to claim 18, wherein the tubular member is sealed, the inside of the tubular member is maintained at a pressure other than atmospheric, and means are provided to monitor this pressure to determine the integrity of the tubular member.

20. A device according to ~~any one of claims 17 to 19,~~ claim 13 wherein the spring is attached to the failure element by a respective starlock washer at each end of the spring each washer being anchored to the failure element so as to be capable of movement in only one direction along the failure element.

21. A device according to ~~any one of claims 13 to 20,~~ claim 13 wherein the failure element is made of a material which changes its appearance in the presence of the contaminant.

22. A device according to claim 13, wherein the indicator element is held in the first position by a biasing force and wherein a further force, which is strong enough to override the biasing force is arranged to act on the indicator element to move it to the second position upon failure of the failure element.

23. A device according to claim 22, wherein the failure element is a tubular element and the indicator element is within the tubular element and is fixed at one end to the failure element, while its other end projects beyond the other end of the failure element and is biased away from the other end of the failure element.

24. A device according to claim 23, wherein the failure element and indicator element are arranged to be supported vertically, wherein the further force is gravity.

25. A device according to ~~any one of claims 13 to 24~~ Claim 13, wherein the length of the failure element in the direction in which the indicator element moves on failure is at least 3 times, preferably at least 10 times, more preferably at least 20 times, and most preferably at least 50 times its size in any other dimension.

26. A device according to ~~any one of claims 13 to 25~~ Claim 13, wherein the failure element comprises a number of different materials arranged in series and/or in parallel.

27. An arrangement for detecting the presence of a chemical contaminant over a predetermined area, the arrangement comprising a plurality of devices according to any one of the preceding claims arranged over the area.

28. An arrangement according to claim 27, wherein the devices are arranged substantially in parallel.

29. A method of detecting leaks from a vessel in a filling station containing a potential source of chemical contaminants, the method comprising the steps of positioning a device according to any one of claims 1 to 26 or an arrangement according to claim 27 or claim 28 in the ground beneath ~~a~~ vessel; and,

monitoring the or each failure element to determine when it has moved to a second position indicating the presence of a leak.

Only I claimed